

Claims

[c1] – 27 –1. A method for controlling metamerism by providing a plurality of formulas that are suitable for producing a color for at least two colored materials, the method comprising: electronically providing color choices, the color choices selectable to represent the color; electronically providing criteria choices, the criteria choices selectable to represent at least a characteristic of colored materials; electronically receiving a color selection from the color choices; electronically receiving a first criteria selection from the criteria choices; electronically receiving a second criteria selection from the criteria choices; electronically matching the color selection and the first criteria selection and providing a first formula suitable to produce the color represented by the color selection for a first of the at least two colored materials; electronically matching the color selection and the second criteria selection and providing a second formula suitable to produce the color for a second of the at least two colored materials; and electronically optimizing the first formula and the second formula to control metamerism between the first colored material and the second colored material.2. The method of claim 1, further comprising elec-

tronically receiving a third criteria selection from the criteria choices and combining at least one of the first criteria selection and the second criteria selection with the third criteria selection.3. The method of claim 1, wherein the color choices and the criteria choices are presented in a display.4. The method of claim 1, wherein the criteria includes at least one of a substrate, financial cost, availability, resin, polymer, varnish, printing method, fabrication method and pigment selection.5. The method of claim 1, wherein the criteria includes the ability for a color to resist at least one of sunlight, water, solvent, acid, alkali, temperature, humidity, abrasion, cracking, bending, light and ultraviolet radiation.6. The method of claim 1, wherein the steps of providing, receiving, matching and optimizing occur over a communication network.7. The method of claim 6, wherein the communication network is the Internet.8. The method of claim 1, wherein the step of optimizing includes modifying the color represented by the color choice.9. The method of claim 1, further comprising storing the color choices and the criteria choices in an electronic library.10. A system for controlling metamericism by electronically providing a plurality of formulas that are suitable to produce a color for at least two colored materials, the system comprising:a memory that electronically stores a color choice, the color choice is selectable to represent the color; a

color selection module that includes a color selection interface to enable an electronic color selection from a plurality of color choices, wherein the color choices and color selection are stored in the memory; a criteria selection module that includes a criteria selection interface to enable an electronic selection of a first criteria selection and a second criteria selection from a plurality of criteria choices, the first and second criteria selections and criteria choices stored in memory; a matching module that electronically matches the color selection and the first criteria selection, and electronically matches the color selection and the second criteria selection; a formula module that provides a first formula suitable to produce the color for a first of the at least two colored materials, and provides a second formula suitable to produce the color for a second of the at least two colored materials; and an optimization module, the optimization module electronically optimizes the first formula and the second formula to control metamerism between the first colored material and the second colored material. 11. The system of claim 10, wherein the criteria selection interface enables at least a third electronic criteria selection. 12. The system of claim 11, further comprising a combining module that combines at least one of the first criteria selection and the second criteria selection with the third criteria selection. 13. The system of claim 10, further

comprising a display that presents the color choices and the criteria choices.14. The system of claim 10, wherein the criteria includes at least one of a substrate, financial cost, availability and pigment selection.15. The system of claim 10, wherein the criteria includes the ability for a color to resist at least one of sunlight, water, solvent, acid, alkali, temperature, humidity, abrasion, cracking, bending, light and ultraviolet radiation.16. The system of claim 10, further comprising a communication network.17. The system of claim 16, wherein the communication network is the Internet.18. The system of claim 10, wherein the of optimizing module modifies the color represented by the color choice.19. The system of claim 10, further comprising an electronic library wherein the color choices and the criteria choices are stored.20. The system of claim 19, further comprising a user interface that provides means to add, update and delete information stored in the electronic library.